Claims

What is claimed is:

1. A capacitor, comprising:

a first nickel electrode;

a BCTZ dielectric covering a side of the first nickel electrode; and

a second nickel electrode sandwiching the BCTZ.

2. The capacitor of claim 1, wherein the BCTZ contains from eighty eight to one hundred atoms of barium for every twelve to zero atoms of calcium.

3. The capacitor of claim 1, wherein the BCTZ contains eighty two to ninety atoms of titanium for each ten to eighteen atoms of zirconium.

4. The capacitor of claim 1, wherein the first nickel electrode is adjacent to an aluminum lead on an integrated circuit.

5. The capacitor of claim 4, wherein the second nickel lead is electrically connected to a second aluminum lead on the integrated circuit.

6. The capacitor of claim 5, wherein the second nickel lead is a base for solder to be reflowed to form a bump.

7. A decoupling capacitor for an integrated circuit, comprising:

a first nickel electrode coupled to an electrical lead of the integrated circuit;

a dielectric applied to the first nickel electrode; and

a second nickel electrode applied to the dielectric and attached to a second electrical lead of the integrated circuit.

8. The decoupling capacitor of claim 7, wherein the dielectric is BCTZ.

9. The decoupling capacitor of claim 7, wherein a portion of the second nickel electrode is deposited on a passivation layer of the integrated circuit.

10. The decoupling capacitor of claim 7, further including an insulator applied to an edge of the BCTZ.

11. The decoupling capacitor of claim 10, wherein the insulator is applied to a portion of the first nickel electrode.

12. The decoupling capacitor of claim 7, wherein a layer of aluminum is applied over the second nickel electrode.

13. The decoupling capacitor of claim 12, wherein a wire lead is attached to the layer of aluminum.

14. A method of making a capacitor, comprising:

a) applying a first nickel electrode to an electrical lead of an integrated circuit;

b) applying a dielectric to the first nickel electrode; and

c) applying a second nickel electrode to the dielectric.

15. The method of claim 14, wherein step (c) further includes the step of:

c1) coupling the second nickel electrode to a second electrical lead of the integrated circuit.

16. The method of claim 13, wherein step (a) further includes the step of:

a1) etching a first nickel layer to form the first nickel electrode.

17. The method of claim 13, wherein step (b) further includes the step of:

b2) applying BCTZ as the dielectric;

b2) applying an insulative layer that covers a portion of the first nickel electrode and the dielectric.

18. The method of claim 13, further including the steps of:

d) etching the first nickel electrode, the dielectric and the second nickel electrode;

e) applying a layer of aluminum;

f) etching the layer of aluminum.

19. The method of claim 13, wherein step (a) further includes the steps of:

a1) applying a layer of aluminum;

a2) etching the layer of aluminum.

20. The method of claim 13, wherein step (a) further includes the step of:

a1) applying a layer of titanium.